We Claim:

1. An electronic identification tag interrogation system comprising:

at least one portal having transmitter means for providing an RF signal and receiver means for responding to an RF tag signal having identifying data encoded therein;

at least one electronic identification tag having supply means for providing electrical power to said tag, memory means for storing identifying data associated with said tag, RF receiver means powered by said supply means for processing an RF signal, and RF transmitter means for transmitting identifying data stored in said memory means in response to the receipt by said RF receiver means of an RF signal having a request encoded therein, said at least one electronic identification tag provided with a discrete identification number; and

interrogation means for directly searching said identification number of said at least one electronic identification tag.

2. The electronic identification system of claim 1 wherein said interrogation means comprises:

means provided in said at least one portal for transmitting a first interrogation signal to said at least one electronic identification tag, said first interrogation signal having a request encoded therein seeking a response from each of said at least one electronic identification tags having an identification number within a first desired address range; and

means provided in said at least one electronic identification tag for processing said first interrogation signal and responding to said first interrogation signal if the identification number of said at least one electronic identification tag is within said desired address range.

3. The electronic identification system of claim 2 wherein said interrogation means further comprises means for selecting a second desired address range when more than one response to said first interrogation signal is received from said at least one electronic identification tag and means for transmitting a second interrogation signal, said second interrogation signal having a request encoded therein seeking a response from each of said at least one electronic identification tags having an identification number within said second desired address range.

4. The electronic identification system of claim 1 further comprising means provided on said at least one portal for acknowledging receipt of a single response from said at least one electronic identification tag, means for communicating directly with said acknowledged electronic identification tag and means for suppressing further replies from said acknowledged electronic identification tag in response to further interrogation signals.

5. The electronic identification system of claim 4 wherein said means for suppressing further replies comprises a signal transmitted by said portal and received by said electronic identification tag instructing said electronic identification not to respond to further interrogation signals.

6. The electronic identification system of claim 5 further comprising means for enabling replies from said acknowledged electronic identification tag in response to further interrogation signals.

7. The electronic identification system of claim 6 wherein said means for enabling further replies

comprises a signal transmitted by said portal and received by said electronic identification tag instructing said electronic identification tag to respond to further interrogation signals.

8. The electronic identification system of claim 4 wherein said means for suppressing further replies comprises means for shifting said electronic identification tag to a lower power consumption mode in which said means for processing said first interrogation signal and said means for processing said second interrogation signal are turned off.

~~9.~~ The electronic identification system of claim ~~8~~ further comprising means for enabling replies from said acknowledged electronic identification tag in response to further interrogation signals.

~~10. The electronic identification system of claim 9 wherein said means for enabling further replies comprises means for periodically detecting the absence of an interrogation signal and means for periodically detecting the presence of an interrogation signal.~~

11. The electronic identification system of claim 10 wherein said RF receiving means and said means for processing said first interrogation signal and said means for processing said second interrogation signal are turned on when said means for periodically detecting the absence of an interrogation signal detects an absence of an interrogation signal and said means for periodically detecting the presence of an interrogation signal thereafter detects the presence of an interrogation signal.

12. The electronic identification system of claim 1 wherein said at least one electronic identification tag is provided with means to delay responding to an interrogation signal.

13. The electronic identification system of claim 12 wherein said means to delay comprises three bits of said tag identification number wherein said at least one electric identification tag responds in one of eight pre-determined time slots.

14. An electronic identification tag interrogation method comprising the steps of:

providing at least one electronic identification tag with a discrete identification number;

transmitting a request from a portal for all said at least one identification tags having an identification number within a desired address range to respond;

continuously bisecting said desired address range until only one of said at least one identification tag responds to said request; and

acknowledging said at least one identification tag.

15. The method of claim 14 wherein said acknowledged tag is instructed to suppress responding to further interrogation requests until all remaining said at least one electronic identification tag are acknowledged.

16. The method of claim 15 wherein said acknowledged tag is shifted to a lower power mode in which it periodically detects an absence of an interrogation signal.

17. The method of claim 16 wherein said acknowledged tag shifted to a lower power mode periodically detects the presence of an interrogation tag.

15 ~~18.~~ The method of claim 14 ~~16~~ ~~17~~ wherein said acknowledged tag having detected the presence of an interrogation signal is re-enabled to respond to further interrogation requests.

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